UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

DEC 0 9 2019

REPLY TO THE ATTENTION OF:

WW-16J

Mr. Phil Argiroff, Assistant Director
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
525 West Allegan Street
P.O. Box 30473
Lansing, MI 48909-7973

Dear Mr. Argiroff:

Thank you for your letter received September 13, 2019, submitting Michigan's multiple discharger variance for mercury to the U.S. Environmental Protection Agency for review under Section 303(c) of the Clean Water Act (CWA). This action would allow the State to develop and implement discharger-specific mercury permit limits that reflect the level currently achievable (the concentration of mercury currently discharged by each facility) instead of the water quality-based effluent limit necessary to achieve the State's mercury criterion (1.3 ng/L) to protect wildlife. The MDV also requires that each permittee develop and implement strategies to identify and control sources of mercury (e.g., wastewater influent, process chemicals) to their effluent.

Consistent with Section 303(c) of the CWA and federal regulations at 40 CFR 131.21, EPA is required to review and approve new or revised state water quality standards. As detailed in the enclosed review document, EPA has determined that Michigan's multiple discharger variance is consistent with the requirements of the CWA and applicable federal regulations. EPA therefore approves the variance.

As required by Section 7 of the Endangered Species Act and federal regulations at 50 CFR Part 402, EPA evaluated whether approval of this multiple discharger variance would affect federally-listed threatened or endangered species or designated critical habitat. As described in the biological evaluation, EPA determined that the action may affect, but is not likely to adversely affect, one or more listed aquatic, aquatic-dependent or wetland species. Further, EPA determined that the action will not destroy or adversely modify designated critical habitat. EPA has initiated but not completed consultation with U.S. Fish and Wildlife Service.

If your staff has any questions regarding this approval, please contact Aaron Johnson of my staff at (312) 886-6845 or johnson.aaronk@epa.gov.

Sincerely,

Thomas R. Short Jr.
Acting Director, Water Division

Enclosure

cc: Sylvia Heaton, EGLE (electronic)
Amanda Bosak, EGLE (electronic)
Scott Hicks, USFWS (electronic)

EPA's Review of Michigan Department of Environment, Great Lakes, and Environment Request for Approval of a Multiple Discharger Variance for Mercury Under Section 303(c) of the Clean Water Act WQSTS # MI 2019-1872

Date: DEC 0 9 2019

I. Executive Summary

On September 13, 2019, the U.S. Environmental Protection Agency received a request from the Michigan Department of Environment, Great Lakes, and Energy (EGLE, or the State) for approval of a multiple discharger variance (MDV) from the water quality standard (WQS) for mercury. The MDV potentially applies to any existing discharger in Michigan that discharges effluent with mercury concentrations in excess of the water quality-based effluent limits (WQBELs) necessary to meet the existing WQS of 1.3 ng/L for the protection of wildlife and 1.8 ng/L for human health. The variance allows the State to develop and implement discharger-specific mercury permit limits that reflect the level currently achievable (the concentration of mercury currently discharged by each facility) and requires each discharger covered by the MDV to implement a pollutant minimization program (PMP) to identify and minimize sources of mercury to the facility.

As discussed in Section II of this document, EPA has determined that the variance is consistent with the relevant requirements of the Clean Water Act (CWA) and federal regulations at 40 CFR Part 131 and therefore approves the WQS revision. Consistent with the requirements of the Endangered Species Act (ESA), EPA evaluated the potential impacts of its approval of the variance on federally-protected species and designated critical habitat and has determined that consultation with the U.S. Fish and Wildlife Service (FWS) is necessary. As discussed in Section III of this document, EPA developed a biological evaluation (BE) that evaluates potential effects of its approval. Last, consistent with the "EPA Policy on Consultation and Coordination with Indian Tribes," EPA evaluated whether approval of the variance may affect the interests of federally-recognized tribes and identified 21 tribes with potential interest in the proposed variance. As discussed in Section IV of this document, EPA provided substantial opportunity for the 21 tribes to provide input on EPA's decision-making process and has therefore fulfilled its duty to consult on a government-to-government basis with federally-recognized tribes on action that may affect tribal interests.

II. Whether Michigan's MDV is consistent with the factors specified in 40 CFR 131.5(a)

Provisions of CWA sections 101(a)(2) and 303(c)(2) are implemented through federal WQS regulations contained in 40 CFR Part 131, including 40 CFR 131.21, which require EPA to review and approve or disapprove state-adopted WQS. In making this decision, EPA must consider the factors set forth at 40 CFR 131.5(a). 40 CFR 131.14 sets forth specific requirements pertaining to variances that EPA must consider in accordance with 40 CFR 131.5(a)(4) when deciding whether to approve or disapprove state-adopted variances. 40 CFR 131.6 sets forth minimum requirements for state WQS submissions that EPA must consider in accordance with

40 CFR 131.5(a)(6). 40 CFR Part 132 sets forth specific requirements pertaining to WQS for the Great Lakes System that EPA must consider in accordance with 40 CFR 131.5(a)(6).

II.A. 40 CFR 131.5(a)(1) through (3) and (5) are not relevant to EPA's review of Michigan's MDV.

40 CFR 131.5(a)(1) - (3) and (5) are not relevant in considering whether to approve Michigan's MDV because the MDV does not remove the underlying designated water uses, criteria, antidegradation policies, antidegradation implementation procedures, or compliance schedule provisions within the State's WQS.

II.B. Whether Michigan's MDV is consistent with 40 CFR 131.14. (40 CFR 131.5(a)(4))

40 CFR 131.14 specifies requirements that states must meet to obtain EPA approval of variances to WQS. As described below, Michigan's MDV meets all of the relevant requirements of 40 CFR 131.14.

II.B.1. Whether the MDV identifies the pollutant and the waterbodies to which it applies and the permittees subject to the MDV, and that the MDV only applies to the specified permittees and waterbodies. (40 CFR 131.14(a)(1) & 40 CFR 131.14(b)(1)(i))

The State's Multiple Discharger Variance and Permitting Strategy for Mercury Fiscal Years 2020-2024 (hereinafter referred to as the Permitting Strategy) identifies mercury as the pollutant to which the variance applies and specifies that the MDV may apply to any NPDES permitted facility within Michigan that the State has determined has reasonable potential to exceed the WQBEL necessary to meet the WQS for mercury. Consequently, the MDV identifies the pollutant (mercury), the waterbodies (those waterbodies within the State of Michigan with NPDES permitted dischargers) to which it potentially applies and the permittees (all NPDES permitted dischargers within Michigan) potentially subject to the MDV, and so meets the requirements of 40 CFR 131.14(a)(1) and 40 CFR 131.14(b)(1)(i).

II.B.2. Whether the State retained, in its standards, the underlying designated use and criterion addressed by the MDV. (40 CFR 131.14(a)(2))

The State has retained in its WQS the underlying indigenous aquatic life and wildlife, fish consumption, and human health-based public water supply designated uses at R 323.1100(1)(e), R 323.1100(1)(g) and 323.1100(8), as well as the related criteria for the protection of those uses at R 323.1057. Therefore, the variance is consistent with the requirements of 40 CFR 131.14(a)(2).

II.B.3. Whether the designated use and criterion addressed by the MDV can be achieved by implementing technology-based effluent limits required under sections 301(b) and 306 of the Act. (40 CFR 131.14(a)(4))

The State's 1.3 ng/L wildlife criterion and 1.8 ng/L human health criterion for mercury are more stringent than any federal effluent guidelines or any other technology-based limits that could be

required under sections 301(b) and 306 of the CWA. Therefore, the variance is consistent with the requirements of 40 CFR 131.14(a)(4).

II.B.4. Whether MDV includes the requirements that apply throughout the term of the MDV that represent the HAC of the waterbody segment applicable throughout the term of the MDV.... (40 CFR 131.14(b)(1)(ii))

40 CFR 131.14(b)(1)(ii) provides that variances include requirements that apply throughout the term of the variance that "represent the highest attainable condition [HAC] of the water body or waterbody segment applicable throughout the term of the WQS variance based on the documentation required in (b)(2) of this section." Among other things, (b)(2) requires documentation demonstrating that "[o]ne of the factors listed in § 131.10(g) is met." 40 CFR 131.14(b)(2)(i)(1). As discussed in Section II.B.9. below, mercury loading from atmospheric deposition resulting from out of state sources is a human caused condition that prevents attainment of the wildlife and human health uses and those sources cannot be remedied by the dischargers or the State to the extent necessary during the term of the variance to achieve the target fish mercury concentrations necessary to attain the wildlife and human health uses and so the factor at 40 CFR 131.10(g)(3) has been met.

40 CFR 131.14(b)(1)(ii)(A) provides that there are three ways to specify HAC for discharger-specific variances:

(1) The highest attainable interim criterion; or
(2) The interim effluent condition that reflects the greatest pollutant reduction achievable; or
(3) If no additional feasible control technology can be identified, the interim criterion or interim effluent condition that reflects the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the State adopts the WQS variance, and the adoption and implementation of a Pollutant Minimization Plan.

Here, there are no additional feasible control technologies that the State could require be installed to control the out of state atmospheric mercury sources that are preventing attainment of the use and so the State specified HAC in accordance with 40 CFR 131.14(b)(1)(ii)(A)(*3*).

Although there are no feasible pollutant control technologies for the State to control out of state mercury sources, in establishing conditions that represent HAC, the State evaluated both (1) preventing introduction of mercury into wastewater at the mercury source(s) (i.e., PMPs), and; (2) installing additional wastewater treatment technology to attempt to remove mercury from wastewater, prior to discharge, at the wastewater treatment plants. All technologies that remove mercury at the wastewater treatment plants (i.e., membrane or non-membrane filtration) function by transferring mercury from wastewater into another waste stream (either solid or concentrated liquid) that requires disposal or requires additional treatment (e.g., incineration of solid waste) that re-releases the mercury to the environment through air emissions.

The State reviewed data from all facilities in Michigan with long-term average effluent mercury concentrations at or less than 1.3 ng/L. Of the 47 facilities identified, 25 (53%) of those facilities had achieved those effluent concentrations by implementing PMPs without construction and

operation of additional wastewater treatment, 22 (47%) utilize non-membrane filtration, and 6 (13%) utilize another type of advanced wastewater treatment. Based on this data, the State concluded that both treatment technology and implementation of a PMP have the capability of reducing a facility's effluent mercury concentrations to an average less than 1.3 ng/L and, thus, that the potential ability of both options to achieve the State's mercury WQS are the same when compared based solely on effluent quality.

To select the option that would minimize the total mercury release to the environment and, thus, represent HAC, the State considered information on the potential treatment technologies for mercury identified in EPA's 2007 document entitled *Treatment Technologies for Mercury in Soil, Waste, and Water*. As described in that document, all currently available treatment technologies to remove mercury from wastewater transfer the mercury to another waste stream, such as solid waste or a concentrated brine, that requires disposal or requires additional treatment (e.g., incineration of solid waste) that re-releases the mercury to the environment through air emissions. Therefore, the State concluded that:

> there is no single treatment that has been proven to reliably meet the mercury WQS without environmental cost (USEPA, 2007). Treatment would involve mercury from one form (i.e., wastewater) being transformed into another, such as solid waste, which would remain in the environment. Conversely, prevention and source reduction eliminate or reduce the mercury from entering the environment. While source reduction may take several permit cycles, the benefits are more desirable than the negative impacts of treatment. (Permitting Strategy, 7-8)

In summary, the State concluded that while both PMP implementation and mercury treatment technology are capable of reducing long-term mercury effluent concentrations down to 1.3 ng/L, the implementation of PMPs also prevents the release of mercury to the atmosphere or other environmental resources (including, potentially, other waterbodies) and thus expressing HAC consistent with 40 CFR 131.14(b)(1)(ii)(A)(*3*) is appropriate when all of a facility's mercury waste streams and emissions are considered.

EGLE's conclusions are consistent with EPA's experience with source reduction efforts for mercury, based on the Agency's review of mercury variances across the Great Lakes region. EPA's review of wastewater treatment facilities in Wisconsin found that, of 48 publicly-owned wastewater treatment facilities with long-term average effluent mercury concentrations at or less than 1.3 ng/L, 16 (33.3%) utilize non-membrane filtration and 32 (66.7%) of those facilities implement mercury PMPs but do not utilize advanced wastewater treatment technology. While both PMPs and non-membrane filtration would be expected to reduce mercury in wastewater effluent, source reduction measures implemented in PMPs offer the added benefit of not generating mercury-laden air emissions or waste streams that require disposal and, thus, would be considered the most suitable option to achieve the HAC. This conclusion is consistent with EPA's 2010 Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion:

> EPA believes that a better approach for reducing mercury releases to the environment is to prevent mercury from entering the wastewater collection system at the source through

> product substitution, waste minimization or process modification, or removing and recycling mercury at the source (source controls) using state-of-the-art technology. These measures aimed at reducing influent loads to POTWs also reduce the use of mercury in the community, which could reduce the amount of mercury entering the environment through other media or sources. (For example, products that contain low levels of mercury may be disposed of as a nonhazardous solid waste and incinerated, releasing mercury to the air.) Where pollution prevention approaches have been implemented, substantial reductions in mercury concentrations in POTW influents, sludges, and effluents have been achieved. (p. 120)

Therefore, EPA concludes based on the data provided by Michigan that implementation of PMPs results in greater total mercury reduction to the State than installing treatment to remove mercury. Consequently, Michigan's expressing HAC as compliance with a discharger-specific interim effluent condition plus a requirement to implement a PMP as described below, consistent with 40 CFR 131.14(b)(1)(ii)(A)(*3*) is appropriate for this MDV. To be clear: EPA is not concluding that mercury treatment technology would not be the basis of an HAC under 40 CFR 131.14(b)(1)(ii)(A)(*2*) in any situation, or that the implementation of PMPs results in greater effluent mercury reduction than mercury treatment technology. Instead, EPA's conclusion is based on the fact that data from Michigan demonstrate that implementation of a PMP is capable of reducing a facility's long-term average effluent mercury concentration down to the 1.3 ng/L criterion applicable in Michigan.

To ensure that each discharger covered by the MDV achieves the identified HAC, the MDV requires each discharger to also comply with a discharger-specific interim effluent condition for mercury, calculated using a statistical procedure for characterizing existing effluent quality (also known as "level currently achievable," or LCA) that is outlined in EGLE's Policy and Procedure WRD-004 and R 323.1211(3). This procedure specifies that each discharger's alternative effluent limitation for mercury shall equal the upper 95th percentile of its representative daily discharge concentrations, as calculated under R 323.1211(3).

Consistent with the State's rules at R 323.1103(6)(b) and R 323.1213(d), in addition to requiring that each discharger meet its interim effluent limit for mercury, the MDV requires the facility to implement a PMP to reduce potential sources of mercury to the system.

Michigan's rules at R 323.1213(1)(d) specify the required components of each discharger's PMP, which include conducting an annual review and semiannual monitoring of potential sources of mercury; quarterly monitoring of mercury in the facility's influent; implementation of reasonable cost-effective control measures for each source of mercury; and submitting annual reports to the State documenting the continued monitoring, list of mercury sources, and actions taken to reduce or eliminate the identified mercury sources. Each facility's PMP implementation plan must "describe the control strategy designed to proceed toward achievement of the goal [i.e., maintaining the effluent concentration of the toxic substance at or below the WQBEL]."

Implementation of PMPs under previous mercury MDVs has resulted in a significant decrease in mercury loading from permitted facilities. The percent of facilities in Michigan achieving long-term average effluent mercury concentrations at or less than 1.3 ng/L has increased from

19% between January 2005 and January 2009 to 44.4% between August 2013 and July 2018. The percent of facilities achieving long-term average effluent mercury concentrations at or less than 5.0 ng/L has increased from 84% between January 2005 and January 2009 to 95% between August 2013 and July 2018. As discussed above, the MDV requires each facility to annually review its mercury sources and implement measures to control each source. As a facility controls each identified source, the MDV requires it to reevaluate its sources and implement measures to control another source. Consequently, the State expects that implementation of PMPs will continue to reduce effluent mercury concentrations at facilities covered by the MDV.

Therefore, the MDV is consistent with the requirements of 40 CFR 131.14(b)(1)(ii).

II.B.5. Whether the MDV includes a statement providing that the requirements are either the HAC identified at the time of variance adoption, or the HAC later identified during any reevaluation, whichever is more stringent. (40 CFR 131.14(b)(1)(iii))

No re-evaluation is required because the term of Michigan's MDV does not exceed five years. As described above in Section II.B.4. of this document, the MDV's requirements reflect the HAC for each facility identified at the time the variance was adopted. Therefore, the MDV is consistent with the requirements of 40 CFR 131.14(b)(1)(iii).

II.B.6. Whether the MDV includes the term of the WQS variance, and whether the term of the MDV is only as long as necessary to achieve the HAC, consistent with the demonstration provided in paragraph (b)(2) of this section. (40 CFR 131.14(b)(1)(iv))

The Permitting Strategy specifies that the term of the variance is fiscal years 2020-2024, a period of five years. Since the State determined that source reduction measures are the most effective means of improving each discharger's effluent quality, the MDV ensures that each facility covered by the MDV achieves the HAC by capping each facility's effluent mercury concentration at the discharger-specific LCA and requiring implementation of source reduction measures and reports on effluent quality throughout the permit term. The implementation of source reduction measures thus far by facilities in Michigan has resulted in 44.4% of facilities achieving an average effluent mercury concentration of 1.3 ng/L or less between August 2013 and July 2018. The implementation of pollutant minimization and source reduction measures will continue to decrease the effluent mercury concentration from each discharger, and thus will ensure that the facilities covered by the MDV are taking the steps necessary to achieve the HAC throughout the term of the variance. Therefore, the MDV is consistent with the requirements of 40 CFR 131.14(b)(1)(iv).

II.B.7. Whether, for a WQS variance with a term greater than five years, the variance includes a specified frequency to reevaluate the HAC ... and a provision specifying how the State intends to obtain public input on the reevaluation. (40 CFR 131.14(b)(1)(v))

Not applicable. The term of the MDV is five years.

II.B.8. Whether the MDV includes a provision that the WQS variance will no longer be the applicable WQS for purposes of the Act if the State does not conduct a reevaluation

consistent with the frequency specified in the WQS variance or the results are not submitted to EPA as required by (b)(1)(v) of this section. (40 CFR 131.14(b)(1)(vi))

Not applicable. The term of the MDV is five years.

II.B.9. Whether the supporting documentation includes a demonstration of the need for a WQS variance and that attaining the designated use and criterion is not feasible throughout the term of the variance because: (1) one of the factors listed in §131.10(g) is met, or (2) actions necessary to facilitate restoration preclude attainment. (40 CFR 131.14(b)(2)(i)(A))

The supporting documentation provided by the State included a demonstration of the need for a WQS variance because atmospheric mercury deposition from out of state sources is a human caused condition that prevents attainment of the wildlife and human health uses and cannot be remedied by the dischargers or the State within the term of the variance, consistent with 40 CFR 131.10(g)(3), and is therefore infeasible.

As discussed in the Permitting Strategy, Michigan considered information on the sources of mercury from Michigan's 2018 Statewide Michigan Mercury Total Maximum Daily Load (TMDL), which identified the sources listed in Table 1 below.

Table 1: Total statewide mercury load from sources identified in Michigan's 2018 Statewide Michigan Mercury TMDL.

Source	Total Load (kg/yr)	Percentage
Atmospheric (natural and anthropogenic) deposition	2,734	98.6%
Out of state atmospheric sources	2,521	
In-state atmospheric sources	213	
NPDES permitted dischargers	39.3	1.4%
Total	**2,773**	
Reductions needed to attain WQS (as identified in 2018 TMDL)	1,814	-65.4%

To ensure that all WQS for mercury would be attained, Michigan's 2018 TMDL evaluated the mercury reductions that would be necessary to achieve the designated use that requires the most stringent mercury criterion, which is Michigan's wildlife use. Michigan calculated that the total mercury load would need to be reduced by 65.42% to achieve the target fish mercury concentrations necessary to attain the wildlife use.

For each of the sources listed in Table 1, Michigan considered the State's ability to remedy that source. For atmospheric deposition, Michigan determined that 92.2% of the atmospheric deposition load is due to natural (e.g., releases of mercury from forest fires, volcanoes and geothermal sources) or anthropogenic (e.g., air emissions) sources from outside of the State and, thus, the State does not have authority to control those sources. For the remaining 7.8% of the atmospheric deposition load resulting from in-state sources, the State determined that it has

authority to control those sources but that even complete elimination of all in-state atmospheric sources of mercury would not reduce mercury loading to the levels needed to attain the wildlife use. As discussed in the Permitting Strategy and Michigan's 2018 TMDL, EGLE's Air Quality Division regulates air emissions through air pollution control rules, such as Part 15 (Emission Limitations and Prohibitions – Mercury) and tracks reductions through an atmospheric emission inventory. Regulation of air emissions led to a 20% reduction in mercury emissions between 2002 and 2011, and the 2018 TMDL set a goal of reducing air emissions of mercury by 81% from a 2002 baseline.

While permitted discharges make up only 1.4% of the total mercury load to surface waters in Michigan, EGLE also evaluated the State's ability to remedy that source, consistent with EPA's 2010 Methylmercury Guidance:

> The fact that air sources or historical contamination are likely dominant causes of impairment does not mean that point sources should not implement cost-effective, feasible pollution prevention measures to reduce their contribution of mercury to the environment, however small those contributions may be. In short, EPA believes that it is reasonable to expect NPDES permittees to implement cost-effective, feasible, and achievable measures to reduce the amount of mercury they discharge into the environment and that, depending on the particular facts, permit writers may reasonably conclude that permit limits that require such measures derive from and comply with water quality standards as required by EPA regulations at 40 CFR 122.44(d)(1)(vii)(A) (p. 121).

As shown in Table 1 above, complete elimination of all sources over which the State has regulatory authority (in-state atmospheric sources of mercury and permitted discharges of mercury) would not reduce mercury loading to the levels necessary to attain the wildlife use. Therefore, atmospheric deposition resulting from out of state sources is a human caused condition that prevents attainment of the wildlife and human health uses and cannot be remedied by the dischargers or the State within the term of the variance. Consequently, the variance is consistent with the requirements of 40 CFR 131.14(b)(2)(i)(A). As discussed above and in Section II.B.4. of this document, the MDV contains the conditions necessary to result in the greatest mercury reductions achievable.

II.B.10. Whether, for a WQS variance to a non-101(a)(2) use, the State submitted documentation justifying how its consideration of the use and value of the water for those uses listed in §131.10(a) appropriately supports the WQS variance and term. (40 CFR 131.14(b)(2)(i)(B))

Not applicable. The MDV does not affect any non-101(a)(2) use.

II.B.11. Whether the supporting documentation includes a demonstration that the term of the MDV is only as long as necessary to achieve the HAC. Such documentation must justify

the term of the WQS variance by describing the pollutant control activities to achieve the HAC. (40 CFR 131.14(b)(2)(ii))

As described in Section II.B.6., the supporting documentation indicates that the term of Michigan's MDV is as long as necessary to achieve the HAC through compliance with facility-specific interim effluent limits for mercury, which reflects the LCA for each facility covered by the MDV, and the implementation of a PMP by each facility to further reduce mercury introduced to the facility. Activities included in the PMP are described in Section II.B.4.

II.B.12. Whether, for a WQS variance that applies to a water body or waterbody segment, that variance includes: (A) identification of any best management practices for nonpoint source controls that could be implemented to make progress towards attaining the underlying designated use and criterion, and (B) any subsequent WQS variance must include documentation of the best management practice implementation and the water quality progress achieved. (40 CFR 131.14(b)(2)(iii))

Not applicable. This is a discharger-specific variance.

II.C. Whether the State has followed applicable legal procedures for revising or adopting standards. (40 CFR 131.5(a)(6))

In a statement dated August 22, 2019 and received by EPA on September 13, 2019, Neil Gordon, Assistant Attorney General in Michigan's Department of Attorney General, certified that Michigan's MDV was duly adopted in accordance with Rule 103 of the Part 4 administrative rules, Mich. Admin. Code, R 323.1103, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, M.C.L. §§ 324.3101 *et seq.*

In adopting the variance, the State also provided opportunities for public input consistent with federal requirements at 40 CFR 131.20(b) and 40 CFR 25. More specifically, the State sent a letter to interested parties (>1,500 email addresses) on May 1, 2019 notifying them of a public hearing on the proposed MDV to be held on June 19, 2019. The State subsequently posted public notice of the hearing on its website on May 3, 2019. The State posted the draft Permitting Strategy along with other supporting documents on its website on May 20, 2019. The State held a public hearing to discuss the proposed MDV on June 19, 2019 at Constitution Hall in Lansing, Michigan and via webinar and accepted public comments on its proposal through July 25, 2019. EGLE received five comment letters during this period and 11 parties provided comments at the public hearing held on June 19, 2019. All comments were submitted with associated EGLE responses to EPA as part of EGLE's submittal. EGLE publicized the public hearing more than 45 days prior to the date of the hearing, recorded the hearing and met other requirements for public hearings specified at 40 CFR 25.5. Consequently, EPA concludes that the State satisfied the public participation requirements of 40 CFR 131.20(b) and 40 CFR 25.5.

Because the State followed its legal procedures for adopting a discharger-specific variance and met federal public participation requirements regarding the revision of WQS, the variance is consistent with the requirements of 40 CFR 131.5(a)(6).

II.D. Whether the State standards which do not include the uses specified in section 101(a)(2) of the Act are based on appropriate technical and scientific data and analyses. (40 CFR 131.5(a)(7))

Although (as described above in Section II.B.2.) the State is retaining its underlying designated uses and criteria for waters impacted by the MDV, for the period of time that the MDV is in effect, the State's standards effectively do not include all of the uses specified in Section 101(a)(2) of the Act. As described above in Section II.B., the MDV is based on appropriate technical and scientific data and analysis. Consequently, the MDV is consistent with the requirements of 40 CFR 131.5(a)(7).

II.E. Whether the State submission meets the requirements included in §131.6 of this part

40 CFR 131.6 identifies the minimum requirements of a WQS submission that EPA must consider. Additionally, the MDV potentially applies to dischargers located within the Great Lakes System, and thus the requirements of 40 CFR 132 also apply to the State's WQS submission. Federal variance regulations specific to the Great Lakes System include multiple provisions at 40 CFR 132, Appendix F, Procedure 2. EPA evaluates each below.

II.E.1. 40 CFR 131.6(a), (c), (d) and (f) are not relevant in considering whether to approve Michigan's MDV.

40 CFR 131.6(a), (c), (d), and (f) are not relevant in considering whether to approve Michigan's MDV because the MDV does not remove the underlying designated water uses, criteria, antidegradation policies, antidegradation implementation procedures or compliance schedule provisions within the State's WQS.

II.E.2. Whether the State submitted methods used and analyses conducted to support the MDV. (40 CFR 131.6(b))

The State submitted the following documents that describe the methods used and analyses conducted to support the MDV:

- Transmittal letter from Phil Argiroff, Assistant Director, Water Resources Division, EGLE, to Joan M. Tanaka, Acting Director, Water Division, EPA Region 5, dated August 27, 2019, received on September 13, 2019;
- Certification Statement for the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Water Resource Division's Establishment of a Multiple Discharger Variance (MDV) for Mercury, signed by Neil Gordon, Assistant Attorney General, dated August 22, 2019;
- Multiple Discharger Variance and Permitting Strategy for Mercury Fiscal Years 2020-2024, dated August 30, 2019;
- State of Michigan's Part 4 Rules: R 323.1103 Variances;
- Response document from the public meeting held on July 19, 2019, and the public comment period from June 10, 2019 to July 25, 2019, with copies of comment letters received from:

    - Freshwater Future,
    - EPA,
    - Charles R. Carpenter (public citizen),
    - American Process Energy Recovery Inc., and
    - Dunn Paper;
- Subject: Part 31 – Calculation of Level Currently Achievable for Mercury in Proposed National Pollutant Discharge Elimination System Permits, Policy and Procedure No. WRD-004;
- Procedure for Review of Pollutant Minimization Programs and Annual Reports, Policy and Procedure No. WB-011;
- Michigan NPDES Noncompliance Notification Permit Language;
- Mercury Sampling and Report Guidance for National Pollutant Discharge Elimination System (NPDES) Permit Compliance; and
- EGLE Public Notice, Informational Meeting, and Public Hearing for the Multiple Discharger Variance and Permitting Strategy for Mercury.

Consequently, the State satisfied the requirements of 40 CFR 131.6(b).

II.E.3. Whether the State submitted a certification by the State Attorney General or other appropriate legal authority that the variance was duly adopted pursuant to State law. (40 CFR 131.6(e))

In a statement dated August 22, 2019 and received by EPA on September 13, 2019, Neal Gordon, Assistant Attorney General in Michigan's Department of Attorney General, certified that the MDV was duly adopted in accordance with Rule 103 of the Part 4 administrative rules, Mich. Admin. Code, R 323.1103, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, M.C.L. §§ 324.3101 *et seq*. Consequently, the State satisfied the requirements of 40 CFR 131.6(e).

II.E.4. Variances shall not apply to new Great Lakes dischargers or recommencing dischargers. (40 CFR 132, Appendix F, Procedure 2 (A)(1))

40 CFR 132.2 defines a new Great Lakes discharger as, "any building, structure, facility, or installation from which there is or may be a 'discharge of pollutants' (as defined in 40 CFR 122.2) to the Great Lakes System, the construction of which commenced after March 23, 1997." As specified in Michigan's Permitting Strategy, only facilities that existed prior to March 23, 1997 are eligible for coverage under the MDV. The variance is therefore consistent with the requirements of 40 CFR 132, Appendix F, Procedure 2 (A)(1).

II.E.5. A variance to a WQS shall not be granted that would likely jeopardize the continued existence of any endangered or threatened species listed under Section 4 of the ESA or result in the destruction or adverse modification of such species' critical habitat. (40 CFR 132, Appendix F, Procedure 2 (A)(2))

EPA drafted a BE during its review and concluded that EPA's approval of the variance may affect, but is not likely to adversely affect, federally-listed species in Michigan. Therefore,

consultation under Section 7 of the ESA is required and, as described in Section III below, EPA has sent a BE to FWS for review. Consequently, the variance satisfies the requirements of 40 CFR 132, Appendix F, Procedure 2 (A)(2).

II.E.6. A WQS variance shall not be granted if standards will be attained by implementing effluent limits required under sections 301(b) and 306 of the CWA and by the permittee implementing cost-effective and reasonable best management practices for nonpoint source control. (40 CFR 132, Appendix F, Procedure 2 (A)(3))

As noted above, in Section II.B.3., the State's 1.3 ng/L wildlife criterion for mercury and its 1.8 ng/L human health-based criterion for mercury are more stringent than federal effluent guidelines. Implementation of cost-effective and reasonable best management practices for nonpoint source control will not result in attainment of the WQS. Consequently, the MDV satisfies the requirements of 40 CFR 132, Appendix F, Procedure 2 (A)(3).

II.E.7. A WQS variance shall not exceed five years or the term of the NPDES permit, whichever is less. (40 CFR 132, Appendix F, Procedure 2 (B))

Michigan's Permitting Strategy specifies that the MDV applies for a period of five years (fiscal years 2020-2024). The MDV, therefore, is consistent with the requirements of 40 CFR 132, Appendix F, Procedure 2 (B).

II.E.8. A variance may be granted if the permittee demonstrates that attaining the WQS is not feasible for one of the six conditions at 40 CFR 132, Appendix F, Procedure 2 (C)(1).

As discussed above, in Section II.B.9., supporting documentation submitted by the State to EPA demonstrated that attaining the WQS is not feasible, consistent with 40 CFR 131.10(g)(6) and 40 CFR 132, Appendix F, Procedure 2 (C)(1)(f). The MDV, therefore, is consistent with the requirements of 40 CFR 132, Appendix F, Procedure 2 (C)(1).

II.E.9. The permittee shall also... show that the variance requested conforms to the requirements of the State's or Tribe's antidegradation procedures. (40 CFR 132 Appendix F, Procedure 2 (C)(2)(a))

Michigan's MDV conforms with the State's antidegradation rules because new dischargers are not eligible for coverage under the MDV, the MDV requires each permittee covered by the variance to comply with limits that represent the LCA by the permittee at the time the variance is granted, and new or increased loadings will not be permitted under the variance. Consequently, the variance is consistent with the requirements of 40 CFR 132, Appendix F, Procedure 2 (C)(2)(a).

II.E.10. The permittee shall also... characterize the extent of any increased risk to human health and the environment associated with granting the variance compared with compliance with WQS absent the variance, such that the State or Tribe is able to conclude

that any such increased risk is consistent with the protection of the public health, safety and welfare. (40 CFR 132, Appendix F, Procedure 2 (C)(2)(b))

The State's mercury water quality criterion for the protection of human health, regardless of whether the water is a public water supply or not, is 1.8 ng/L. The primary human health risk associated with mercury in aquatic systems is the contamination of fish with mercury and long-term human consumption of contaminated fish. Although the MDV allows EGLE to establish variance-based permit limits that would exceed the mercury WQBELs, the State has established a fish consumption advisory program to help human fish consumers limit exposure to fish that may be contaminated with mercury. Given the State's effort to inform the public of how to safely consume fish caught in state waterbodies, the MDV does not result in an appreciable increase in risk to human health.

The State's acute and chronic aquatic life criteria for mercury are 1,400 ng/L and 770 ng/L, respectively. As discussed in Michigan's Permitting Strategy, 95% of facilities have average effluent mercury concentrations less than 5.0 ng/L. As discussed in Section II.B.4. above, interim effluent limits established under the MDV represent the LCA for each facility and cannot permit an increase in mercury loading. Given that the State's lowest aquatic life criterion is two orders of magnitude higher than the variance-based proposed daily maximum permit limits allowed under the MDV, the variance is expected to have no impact on aquatic life.

As with humans, the primary risk to wildlife is through consumption of contaminated prey (fish and other aquatic organisms). Based on data from the Statewide Michigan Mercury Total Maximum Daily Load, NPDES discharges account for only 1.4% of the total mercury load to Michigan surface waters. Given the limited impact that each discharger will have on mercury concentrations in their respective receiving waters and the relatively low concentration of mercury discharged by permittees in Michigan, the overall impact of mercury from permitted wastewater effluent on wildlife is limited. Nonetheless, as required, EPA evaluated possible effects of approval of the MDV on ESA-listed species that occur in the action area. This is discussed further in Section III of this document. The MDV requires each discharger covered by the MDV to implement a PMP to reduce mercury in its wastewater effluent, which is expected to result in continued declines in effluent mercury over the term of the variance.

Consequently, the variance is consistent with the requirements of 40 CFR 132, Appendix F, Procedure 2 (C)(2)(b).

II.E.11. The permittee shall submit an application for a variance to the regulatory authority issuing the permit... (40 CFR 132, Appendix F, Procedure 2 (D))

EGLE provided an application for the MDV and, as described in sections II.B.9. and II.E.8., documented within the application that attaining the WQS is not feasible and thus the need for a variance. As discussed in sections II.E.9. and II.E.10., the variance complies with the State's antidegradation rules and approval of the variance will not result in an appreciable increase in the risk to human health or the environment. Consequently, the variance is consistent with the requirements of 40 CFR 132, Appendix F, Procedure 2 (D).

II.E.12. Upon receipt of a complete application for a variance, and upon making a preliminary decision regarding the variance, the State or Tribe shall public notice the request and preliminary decision for public comment…
(40 CFR 132, Appendix F, Procedure 2 (E))

As described in Section II.C., the State sent a letter to interested parties (>1,500 email addresses) on May 1, 2019 notifying them of a public hearing on the proposed MDV to be held on June 19, 2019. The State subsequently posted public notice of the hearing on its website on May 3, 2019. The State posted the draft Permitting Strategy, along with other supporting documents, on its website on May 20, 2019. The State held a public hearing to discuss the proposed variance on June 19, 2019 and accepted public comments on its proposal through July 25, 2019. Consequently, the variance is consistent with the requirements of 40 CFR 132, Appendix F, Procedure 2 (E).

II.E.13. ...If all or part of the variance is approved by the State or Tribe, the decision shall include all permit conditions needed to implement those parts of the variance so approved. Such permit conditions shall, at a minimum, require... Compliance with an initial effluent limitation which, at the time the variance is granted, represents the LCA by the permittee, and which is no less stringent than that achieved under the previous permit...
(40 CFR 132, Appendix F, Procedure 2 (F)(1))

As described above in Section II.B.4., consistent with R 323.1103(6)(a) and EGLE's Policy and Procedure WRD-004, the MDV requires that, for each discharger covered by the MDV, the permit include an interim effluent limit that reflects the discharger-specific LCA for mercury based on the effluent data for that facility collected during the last permit term and that is no less stringent than that achieved under the previous permit. Therefore, the MDV is consistent with the requirements of 40 CFR 132, Appendix F, Procedure 2 (F)(1).

II.E.14. ...If all or part of the variance is approved by the State or Tribe, the decision shall include all permit conditions needed to implement those parts of the variance so approved. Such permit conditions shall, at a minimum, require... That reasonable progress be made toward attaining the WQS for the waterbody as a whole through appropriate conditions...
(40 CFR 132, Appendix F, Procedure 2 (F)(2))

As described in Section II.B.4., the MDV requires that, for each discharger covered by the MDV, the permit require the discharger to implement the source reduction measures outlined in their PMP and permit during the term of the variance. The goal of these PMP efforts is to decrease mercury levels in the discharger's effluent and to ensure that the facility is making reasonable progress towards attainment of the WQS. Consequently, the MDV is consistent with the requirements of 40 CFR 132, Appendix F, Procedure 2 (F)(2).

II.E.15. ...When the duration of a variance is shorter than the duration of a permit, compliance with an effluent limitation sufficient to meet the underlying WQS, upon the expiration of said variance... (40 CFR 132, Appendix F, Procedure 2 (F)(3))

As discussed in Section II.B.6. above, Michigan's Permitting Strategy limits the term of the MDV to a period of five years (fiscal years 2020-2024). Michigan's variance rules at R 323.1103(6)(c) requires that "if the duration of a variance is shorter than the duration of a permit, then compliance with an effluent limitation that is sufficient to meet the underlying water quality standard shall be achieved when the variance expires." Consequently, the MDV is consistent with the requirements of 40 CFR 132, Appendix F, Procedure 2 (F)(3).

II.E.16. ...If all or part of the variance is approved by the State or Tribe, the decision shall include all permit conditions needed to implement those parts of the variance so approved. Such permit conditions shall, at a minimum, require... A provision that allows the permitting authority to reopen and modify the permit based on any State or Tribal triennial WQS revisions to the variance. (40 CFR 132, Appendix F, Procedure 2 (F)(4))

All NPDES permits issued by EGLE include a provision that states: "[a]fter notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules." Consequently, the MDV is consistent with the requirements of 40 CFR 132, Appendix F, Procedure 2 (F)(4).

II.E.17. The State or Tribe shall establish and incorporate into the permittee's NPDES permit all conditions needed to implement the variance as determined in section F of this procedure. (40 CFR 132, Appendix F, Procedure 2 (G))

As described in sections II.E.13. through II.E.16. above, the MDV requires that each discharger's permit incorporates all permit conditions needed to implement the variance consistent with 40 CFR 132, Appendix F, Procedure 2 (F). Consequently, the MDV is consistent with the requirements of 40 CFR 132, Appendix F, Procedure 2 (G).

II.E.18. ...A variance may be renewed, subject to the requirements of sections A through G of this procedure. As part of any renewal application, the permittee shall again demonstrate that attaining WQS is not feasible based on the requirements of section C of this procedure. The permittee's application shall also contain information concerning its compliance with the conditions incorporated into its permit as part of the original variance pursuant to sections F and G of this procedure. Renewal of a variance may be denied if the permittee did not comply with the conditions of the original variance. (40 CFR 132, Appendix F, Procedure 2 (H))

This is not a variance renewal, and therefore, this requirement is not applicable to EPA's review of the variance.

II.E.19. ...All variances and supporting information shall be submitted by the State or Tribe to the appropriate EPA regional office and shall include: (40 CFR 132, Appendix F, Procedure 2 (I))

1. Relevant permittee applications pursuant to section D of this procedure

The State's adoption of the MDV does not extend coverage of the MDV to any specific permittees. State decisions on whether to grant coverage under the MDV to individual permittees will be made during the State's permit issuance process. As discussed in Section II.B.9. above, the State submitted documentation that attaining the WQS is not feasible because atmospheric mercury deposition from out of state sources is a human caused condition that prevents attainment of the wildlife and human health uses and cannot be remedied by the dischargers or the State within the term of the variance.

2. Public comments and records of any public hearings pursuant to section E of this procedure

The State documented the fact that it held a public hearing and submitted this documentation to EPA. During the comment period, EGLE received five comment letters related to the MDV and 11 parties submitted comments to EGLE during the public hearing held June 19, 2019. All comments were submitted to EPA in the EGLE's 'Response Document from the Public Meeting Held on July 19, 2019 [sic], and the Public Comment Period from June 10, 2019 to July 25, 2019.'

3. The final decision pursuant to section F of this procedure

The State's adoption of the MDV does not extend coverage of the MDV to any specific permittees. State decisions on whether to grant coverage under the MDV to individual permittees will be made during the State's permit issuance process. As discussed in sections II.E.13. through II.E.16. above, the MDV requires that the NPDES permit for each discharger granted coverage under the MDV includes the permit conditions required under 40 CFR 132 Appendix F Procedure 2 (F).

4. NPDES permits issued pursuant to section G of this procedure

The State's adoption of the MDV does not extend coverage of the MDV to any specific permittees. State decisions on whether to grant coverage under the MDV to individual permittees will be made during the State's permit issuance process.

5. Items required by sections I.1 through I.3 of this procedure shall be submitted by the State within 30 days of the date of the final variance decision. The item required by section I.4 of this procedure shall be submitted in accordance with the State or Tribe Memorandum of Agreement with the Regional Administrator pursuant to 40 CFR 123.24.

The State submitted the items required by sections I.1 through I.3 of this procedure.

6. EPA shall review the State or Tribe submittal for compliance with the CWA pursuant to 40 CFR 123.44 and 40 CFR 131.21.

As discussed in sections II.E.13. through II.E.16., the draft permit provided by the State appropriately implements the variance. In Section II of this record, EPA reviews the WQS submittal consistent with the requirements of 40 CFR 131.21.

Conclusion

For the reasons described above, Michigan's MDV is consistent with the requirements of 40 CFR 131.5, the CWA, 40 CFR 131 and 40 CFR 132. Consistent with 40 CFR 131.5(b), EPA approves the WQS variance adopted by the State.

III. ESA Requirements

Consistent with Section 7 of the ESA and federal regulations at 50 CFR Part 402, EPA is required to consult with FWS on any action taken by EPA that may affect federally-listed threatened or endangered species or designated critical habitat.

Because the MDV could potentially apply to any discharger in Michigan, it has the potential to affect any federally-listed aquatic, aquatic-dependent or wetland species in the State. As discussed in its biological evaluation, EPA reviewed all available data on the potential effects of mercury on listed species in Michigan and determined that its approval of the MDV may affect, but is not likely to adversely affect, federally-listed species in Michigan.

EPA has initiated but not completed consultation with FWS on the MDV approved above. EPA has determined that this approval action does not violate Section 7(d) of the ESA, which prohibits irreversible or irretrievable commitments of resources that have the effect of foreclosing the formulation or implementation of reasonable and prudent alternatives, and has included in the record the basis for the conclusion that there are not impacts of concern during the interim period until the consultation is completed.

IV. Tribal Consultation Requirements

On May 4, 2011, EPA issued the "EPA Policy on Consultation and Coordination with Indian Tribes" to address Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments." The EPA Tribal Consultation Policy states that "EPA's policy is to consult on a government-to-government basis with federally recognized tribes when EPA actions and decisions may affect tribal interests."

On September 18, 2019, EPA sent letters outlining the proposed MDV and offering government-to-government consultation to the tribal leaders of all federally-recognized tribes in Michigan, as well as tribes outside of Michigan that are party to the 1842 Treaty (a total of 21 tribes were invited to consult). The consultation letter further clarified that if EPA did not receive a response from the Tribe by October 20, 2019, as either written comments or an attempt to

schedule a conference call, EPA would conclude that the Tribe did not wish to engage in consultation and EPA could therefore move forward with a decision.

Saginaw Chippewa Indian Tribe of Michigan waived formal consultation through a phone call on September 25, 2019. None of the other 20 identified tribes responded to the letter in written or verbal means by October 20, 2019. EPA therefore provided substantive opportunity for the 21 tribes to provide input on EPA's decision-making process and has therefore fulfilled its duty to consult on a government-to-government basis with federally-recognized tribes on actions that may affect tribal interests.